

(Abstract)

5 An aluminum nitride joined body comprising two
pieces of aluminum nitride sintered body plates joined
together without using adhesive, and a metal layer
10 formed on a portion of the junction interface thereof,
wherein, as viewed on a side section passing through
the center of the joined body, a plurality of voids are
existing in the directly joined region where the
sintered body plates are directly facing each other on
the junction interface, the voids having an average
length L of 0.5 to 4 μm along the junction interface,
thereby forming non-joined portions due to the voids,
and a non-joined ratio Q on the side section as
15 calculated by the following formula (1),

$$\text{Non-joined ratio } Q = (X/Y) \times 100 \quad \text{--- (1)}$$

where X is a length of the non-joined portion in
the direction of junction interface expressed by
the sum of lengths L of the voids existing in the
20 directly joined region, and Y is a length of the
directly joined region where the voids are
existing,

is in a range of from 0.1 to 0.5% on average. The AlN
plate-like joined body has the metal layer contained
25 therein that is effectively suppressed from warping,
exhibits a large junction strength, excellent
durability, and is useful as a plate heater or an
electrostatic chuck for treating a semiconductor wafer
that is placed thereon in an apparatus for producing a
30 semiconductor.